

CONTINUOUS IMPROVEMENT PROJECT DATABASE

DIVISION 8 PROJECTS

Project Name	Project Description	Division	Project Year	Contact Name	Contact Number	Project Category
Tail Gate Prop	<p>The operator of the dump truck needed a safe and effective way to clean off the tailgate apron after dumping only a partial load of gravel without causing injury to himself and/or others. It is necessary to clean all loose gravel from the apron before relocating the truck to prevent rocks from falling from the truck and causing possible windshield or body damage to vehicles which may be traveling behind the dump truck.</p> <p>After realizing the potential hazards of this operation, the Road Oil and Equipment Safety Awareness Team (Larry Thompson, Michael Garner, Terrell Reynolds) in Division 8 discussed a possible solution to the problem. They designed and fabricated a tail gate prop.</p> <p>The tail gate prop is user friendly for the operator. There are no safety hazards. It is inexpensive to fabricate, and if used correctly, should reduce the chance of injuries to hands, fingers, and arms. Fewer injuries means less lost work time and fewer worker's compensation claims, which could be a major cost savings.</p>	Div 8	2009	Larry Thompson	(704) 982-0101	Safety Improvement
Shovel Retainer	<p>There was no proper location on the truck bed where a shovel could be secured. A shovel is always needed to clean excess material out of the truck bed and off the bed apron.</p> <p>Proper location was identified on the dump body for installation of the shovel holder. The holder was then designed, fabricated, and installed. The shovel holder will keep the shovel from collecting dirt and debris on the handles of the shovel. The truck operator now has the capability to pick up small dead animals off the highway while driving to and from the job site. This eliminates the need for sending out an additional employee, which would be a cost savings to the department.</p> <p>The operator no longer has to climb up on the bed to retrieve the shovel, which will prevent possible falls and muscle strains. The shovel is secured on the truck preventing the possibility of it falling into the roadway which could cause broken windshields, body damage, or even vehicle accidents.</p>	Div 8	2009	Stephen Thompson	(336) 896-7021	Safety Improvement
Erosion Control on R-2231	<p>Problem: Due to default of contract obligations on TIP Project R-2231, the prime contractor was removed and the project sat idle for several weeks. The Division Engineer requested that maintenance, operations, and construction units mobilize personnel and equipment to perform erosion control maintenance and repair. The project was 16.2 miles in length with approximately 5 miles on 4 lane highway unpaved. Several meetings were held with division staff to determine the personnel and equipment needed to perform erosion work. Three maintenance crews from Montgomery, Richmond, and Randolph Counties along with others were mobilized to begin erosion work on the project.</p> <p>Solution: The three maintenance crews performed erosion control maintenance throughout the project. The Randolph County maintenance crew worked on the northern section which was mostly complete. The Montgomery and Richmond County crews worked on the southern part of the project which had 5 miles of unpaved roadway and various erosion problems. These crews not only repaired erosion devices, but repaired eroded cut and fill slopes, graded shoulders and ditches, and built some median bridge protection.</p>	Division 8	2008	Kevin Hedrick	(910) 582-7075	Energy and Environment
House Move Calculations	<p>Problem: Most all house move reviews require repetitive type calculations involving different sets of numbers each time. The task of conducting these calculations takes time and increases the risk of miscalculations through human error.</p> <p>Solution: A spreadsheet was developed to calculate house move data automatically.</p>	Operations Division 8	2007	Reuben Blakley	(336) 629-1423.	Customer Service
Benefits and Life Planning Workshop	<p>An employee approached the Division Engineer about the need to obtain information on planning for retirement, obtaining contacts for services such as investments, and obtaining information on choices that would need to be made prior to and after retirement.</p> <p>The Division Engineer put together a team to take the former Prepare workshop and redesign it to fit the needs of the division employees. Thus far, two workshops have been held beginning with employees closest to retirement status.</p> <p>In these workshops, speakers from the community are chosen to discuss such issues as nursing home/assisted living options, financial investments, financial/identity security, medical</p>	Operations- Division 8	2005	Mary Helms	(910) 944-2344	Communications
Daylily Planting	<p>Daylilies were to be planted along US 64 and US 74 Bypasses totaling 64.74 acres or 46,162 daylilies. By providing daylilies grown by DOC to contractor, DOT was able to save \$3.07 per plant.</p> <p>Total savings to DOT \$141,768.18.</p> <p>Public response has been very positive to beauty provided by the plantings along our highways.</p>	Div 8	2003	Arnold Lassiter	(910) 944-2344	Dollar Savings

Recycled Erosion Control Stone	Riprap stone used for temporary erosion control devices on secondary roads construction has to be removed when projects are completed and permanent vegetation is established. Rather than dispose of used material, the stone is removed and stockpiled at maintenance facilities. As small amounts of riprap are needed for repairs and other maintenance activities, the recycled stone is used for these activities. This eliminates purchasing additional stone or hauling small quantities from the quarry and allows us to use the stone twice for one price	OPERATIONS - DIVISION 8	2002	Johnny Ransdell	(919) 775-3122.	Dollar Savings
Shoulder Machine	Due to the expense of self-propelled wideners, which cost \$120,000 per unit, we are experimenting with a shoulder machine, which attaches to the front of a rubber-tired loader at a unit cost of \$30,000. Thus far, the unit works great for shoulder work when dispensing dirt. Currently we are making modifications to achieve the same results with asphalt. With modifications in place we expect to achieve the same good results with dirt as well.	OPERATIONS - DIVISION 8	2002	Mike Garner	(910) 947-2721	Dollar Savings
Bridgesharks	Drift and debris constantly build up against bridge columns during heavy rains causing scouring of the river banks and silt sedimentation build-up against the debris. The Bridgeshark is installed on the face of bridge columns and is designed to eliminate drift accumulation on the columns. It consists of a molded polyethylene turbine attached to a stainless steel track. The rotating turbine will slide up and down on the track relative to the water surface elevation and is designed to intercept and turn floating trees, logs, and debris before they impact the column face. The Bridgesharks were installed on Bridge #50 in Chatham County that spans Deep River.	OPERATIONS - DIVISION 8	2002	Richard Hancock	(910) 944-2344.	Environmental Sustainability
Secondary Road Parcels	The District survey crew collects all data needed for plans on secondary road projects involving turn lanes and widening. When the data is collected a CAD tech will draw tax parcels. This process included: 1) Obtaining maps from tax dept. 2) CAD technicians scaling tax parcels and drawing them on respective project maps. This averaged 8-man hours/project. Using ARC VIEW software the process is now 30 minutes. Digital data is obtained from county Tax dept and the data is converted into a format that can be then imported to Mico-station. Once the data is in Micro-Station the CAD techs rotate and scale the parcels.	OPERATIONS - DIVISION 8	2002	Reuben Blakley	(336) 629-1423.	Labor Hour Savings
Rut Measurement Tool	Every two years a condition survey of the paved road network is performed on all state maintained primary, secondary, and urban systems. Raters had to get out of the car and measure rutting at least once per day by using a straight edge and ruler at ground level. While the current procedure is performed quickly, it was necessary for the raters to be in a travel lane with on-coming traffic in either a stooping or squatting position trying to get a measurement from a smaller ruler. An added hindrance to the process was the direct sunlight and glare for employees wearing glasses/bifocals.	OPERATIONS - DIVISION 8	2002	Harold Matthews	(910) 582-7075.	Safety Improvement
Hydraulic Cylinder Safety Lock	The neat appearance of our highways is a top priority within the State of North Carolina. Thus, mowing is a vital part of maintaining the neatness of our highway system. It is often necessary for the mowing operator to get under a rear-mounted mower to replace blades or remove material caught in the reel, which results in a safety hazard for the operator. In addition, hauling mowers back to the shop for these minor repair results in lost efficiency and increased labor costs. The Division 8 Equipment team developed a device to make it safer for an operator or mechanic to work underneath a rear-mounted mower without the risk of the lift falling.	OPERATIONS - DIVISION 8	2002	Gary Nance	(910) 947-2721.	Safety Improvement
The Beast	Due to the vast amount of clearing required for secondary construction, a way to dispose of vegetation and stumps efficiently and cost effectively was needed. The costs of equipment rental, labor, and landfill fees created the need to find a better method of disposal. Initially, a Waste Wood Recycler called The Beast was rented to effectively and efficiently grind up all debris. There was a dramatic increase in the rental rate of this piece of equipment prompting Division 8 to pursue the purchase of its own recycler. The uniqueness of this project lies in the fact that there was not an equipment class code for this particular piece of equipment. This team had to pave the way for such a purchase from scratch. By purchasing this piece of equipment and renting from us, we not only save \$9300 per month in rental charges, but also contribute back into the system funds for future equipment purchases.	OPERATIONS DIVISION 8	2001	Richard Hancock	(910) 944-2344.	Dollar Savings

NHS Retroreflectance Reading	<p>The need to collect data for Pavement Marking Inspection Reports manually exposes both DOT employees and the employees of private contractors to high volumes and vehicle speeds of the motoring public. It also decreases travel efficiency through lane closures to obtain measurements. This team investigated the idea of having the collection of retroreflectivity data collected by a mobile unit.</p> <p>A mobile unit would collect readings every 10-15 feet where as manually, readings are done 6 times per line per mile. The mobile unit summarizes data every 1/10 of a mile creating a gain of 4 readings per mile using a mobile unit. The biggest advantage in using a mobile retroreflectometer is the cost savings generated. The cost for DOT employees to collect data for 150 miles would be approximately \$20,000.00. Depending on the number of mobilization charges, a contractor could provide a mobile unit for as little as \$6,300.00. If additional mobilization charges are necessary, the total savings will be between \$7,000 and \$13,000. That is a cost saving based on this project alone. A per mile savings statewide could range from \$47 to \$87.</p>	OPERATIONS DIVISION 8	2001	Will Garner	(910) 944-2344	Dollar Savings
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